

# WCRP REPORT

World Climate Research Programme



ICSU  
International Council for Science

## Report of the 35<sup>th</sup> Session of WCRP Joint Scientific Committee

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All the presentations are also available here:  
<http://www.wcrp-climate.org/JSC35/agenda.html>

# 1. Opening Session

Chair A. Busalacchi called the meeting to order.

Dr P. Becker, Vice President DWD, welcomed the group and expressed DWD support for the meeting and for climate research leading to climate services.

A. Busalacchi introduced new Director WCRP, D Carlson.

**1.1** D. Carlson ([see presentation 1.1](#)) presented his view and introduction to WCRP structures, staff and finances. He showed all WCRP Grand Challenges cutting across all projects, appreciated the central and project staff members as a unique core resource of the entire programme and showed a busy and geographically-widespread range of WCRP completed and planned activities. He showed overall WCRP financial status as good and consistent with prior years with the exception of a few national contributions expected but not yet received. In response to a concern that attention and funding might turn away from climate research, Carlson anticipated that growing public concern about climate change would in fact turn attention back to climate research for answers to urgent and regional/local questions.

**1.2** A. Busalacchi ([see presentation 1.2](#)) reviewed the WCRP mission, introduced new members, and then reported on the prior JSC meeting (JSC-34, held in Brasilia, Brazil in May 2013). He introduced a set of issues and topics, partly as background and context and partly as content for the meeting. He finished with a review of the proposed agenda and a list of his expectations and goals for the meeting as follows:

- Enhanced support by WCRP for the GFCS
- Implementation of WCRP Grand Challenges
- Terms of engagement with Future Earth
- Support/co-sponsorship of key partners in IGBP
- WCRP regional strategy
- Continue to strengthen partnership with WMO CClan
- New chapter for JPS, e.g., reporting, liaisons
- All JSC-35 presenters should specifically address issues raised at JSC-34 and actions items documented in the JSC-34 report.

## 2. Sponsors Session

**2.1** J. Lengoasa welcomed the guests and participants and confirmed WMO as an enthusiastic sponsor of WCRP. He reviewed recent WMO Executive Council (EC) activities and discussions in the area of climate research and climate services, with particular emphasis on the Global Framework for Climate Services (GFCS). Lengoasa discussed WMO's anticipated change of status on the Science and Technology Alliance for Global Sustainability from observer to member, considered by WMO EC and WMO itself as a useful mechanism to encourage and ensure Future Earth engagement with a full range of WMO activities including GFCS.

**2.2** A. Fischer ([see presentation 2.2](#)) conveyed greetings and support to the JSC from IOC. He reviewed IOC's role within UNESCO and the importance of WCRP (and WCRP CLIVAR) as the research component of IOC's mission. Fischer reported status and progress of IOC Global Ocean Observing System (GOOS) Framework for Ocean Observations. Fischer expressed IOC continuing engagement with and dependence on WCRP to maintain a climate research focus and links across both institutional and modelling and observational

components, albeit in the context of IOC disappointment in continued inability to provide expected financial support.

**2.3** F. Lucio ([see presentation 2.3](#)) reported status and recent actions of GFCS, mentioning specifically recent joint activities with WCRP in Africa and Latin America. Lucio focused on outcomes of the recent WMO Intergovernmental Board on Climate Services.

### 3. Grand Challenges Session

**3.1** D. Stammer ([see presentation 3.1](#)) reported progress and initiatives for the WCRP Sea Level Rise and Regional Impacts Grand Challenge. Stammer presented sea level rise as an integrating issue across WCRP and as an extensive issue connecting to topics outside of WCRP. He identified an apparent redundancy of this grand challenge with an existing joint WCRP/IOC Task Group on Sea-Level Variability, with the suggestion to incorporate that task group into this grand challenge. **Action item.** Stammer described scoping team, overall goals, working structures, and proposed memberships, partnerships and timelines.

**3.2** S. Seneviratne and G. Stephens ([see presentation 3.2](#)) reported progress and initiatives for the WCRP Water Availability Grand Challenge. They described how four GEWEX science questions (on predictability of precipitation, global water resources, changes in extreme conditions and the role of water in global energy balances) contribute to this Grand Challenge as well as the Extremes Grand Challenge. They reported recent white papers, workshops and a recent pan GEWEX meeting and anticipated the upcoming pan GEWEX pan CLIVAR joint meeting. They outlined strong data themes for this Grand Challenge, including existing and new in situ and satellite data streams, and showed many close connections among observations and models.

**3.3** G. Flato and T. Shepard reported progress and initiatives for the WCRP Cryosphere in a Changing Climate Grand Challenge. Flato ([see presentation 3.3](#)) reported white papers and planning workshops. He noted close integration of GC activities within CliC overall planning. Priorities will include multi-scale (temporal) predictions of polar climate and of polar processes on global climate, evaluation of regional and global models to identify strengths or deficiencies in polar components, improved representation of permafrost and other polar land surface types as contributors to carbon cycles in global models, and cryospheric contributions to sea level rise. Flato noted many connections from these activities to other WCRP Grand Challenges. Shepard ([see presentation available](#)) reported planning for the Polar Climate Predictability Initiative (PCPI) focused on seasonal to multi-decadal predictability of and arising from polar regions as well as systematic investigation of many elements of Arctic and Antarctic polar predictability. He described an anticipated PCPI session at AGU FM 2014 and early plans for a Year of Polar Prediction, tentatively 2017 to 2019.

**3.4** C. Goodness ([see presentation 3.4](#)) reported progress and initiatives for the WCRP Regional Climate Information Grand Challenge. She noted progress on a white paper, progress on leadership and organization, and the group's thinking on initial activities and targets. Goodness noted the many connections to WCRP projects, working groups and other grand challenges, with observations and information delivery as common elements across the WCRP. The concerns about observations at regional scales included reference to the GEWEX regional hydrology project networks and how to preserve or enhance them. Goodness outlined connections to WGRC activities e.g. CORDEX, to specific regional activities such as the Saskatchewan (Canada) river basin project, and to WGSIP and the joint WCRP / WWRP S2S initiative. She outlined plans and topics for a 'distillation' workshop

focused on developing status reports and research plans toward more effective assessment, analysis, integration and conveyance of regional climate information.

**3.5** S. Seneviratne ([see presentation 3.5](#)) reported progress and initiatives for the WCRP Climate Extremes Grand Challenge starting from a refined title “Understanding and predicting weather and climate extremes”. Seneviratne outlined progress on and growing circulation of a white paper, with associated recruitment of new members to the organizing group and a more detailed implementation plan to follow. That group has identified eight key questions, each question touching two or more WCRP projects or working groups. Issues of observations source and quality and model improvements cross all the questions listed. Seneviratne listed several focus sessions planned for the upcoming GEWEX and CLIVAR meetings and noted a 2014 summer school already planned around this topic.

**3.6** S. Bony ([see presentation 3.6](#)) reported progress and initiatives for the WCRP ‘Clouds’ Grand Challenge, formally the Clouds, Circulation and Climate Sensitivity Grand Challenge. Bony described a short history of these ideas leading to a summary paper in 2014, plans to advance the initiative at up-coming WCRP events, and the necessary integration across often-separate small-scale (cloud) and large-scale (general atmospheric circulation) communities. She noted how advances in observations and modelling should enable timely progress. She then showed the scientific basis for each of four questions advanced under this grand challenge. Bony outlined next steps including rephrasing the questions in a way to set specific goals and monitor progress and using future events, some general and some specific, to advance planning and research on these issues. This group asked whether WCRP should consider a future tropical basin field project and should consider instituting its own scientific assessment process(es) to compliment and help IPCC processes.

END OF DAY ONE

## 4. Core Project Session

**4.1** G. Flato ([see presentation 4.1](#)) presented the report from the WCRP Climate and the Cryosphere (CliC) project. Flato presented a list of new and on-going CliC projects, including close integration in this case of the CliC project with the Cryosphere in a Changing Climate Grand Challenge. He noted extensive cooperation with Arctic (IASC) and Antarctic (SCAR) science organizations. He noted steps taken or needed to ensure highly desirable integration of the Polar Climate Predictability Initiative between CliC and SPARC and to facilitate effective CliC support for the Sea Level Grand Challenge. Flato also reported persistent emergence of models and modelling as CliC themes and foci and the extensive and growing set of CliC information and outreach materials. Finally, he itemized CliC response to or progress on 18 actions evolving from JSC-34.

**4.2** S. Seneviratne and G. Stephens ([see presentation 4.2](#)) presented the report from the WCRP Global Energy and Water Exchanges (GEWEX) project. They described a series of recent GEWEX activities under the structure of the four projects within GEWEX. Their descriptions included reports, science examples, and issues arising – again and often the issues of data quality and data access and of modelling and model improvements. For each project they showed connections to other activities with GEWEX and how each project contributed to one or more of the WCRP grand challenges. Very often they identified connection and outreach possibilities, particularly outreach to a large science community not presently engaged with GEWEX. They finished with a preview of the up-coming GEWEX science conference.

**4.3** J. Alexander (*see presentation 4.3*) presented the report from the WCRP Stratospheric Processes and their Role in Climate (SPARC) project. She started by emphasizing the ‘whole atmosphere’ approach of the SPARC community, consistent with whole atmosphere models and evidence of a growing need and effort to understand the troposphere-stratosphere as an integrated system. Alexander presented many science highlights from the recent SPARC General Assembly. She reported several SPARC activities related to ozone and to atmospheric lifetimes of ozone-depleting substances, including in several cases publication of results and data as integrated special issues in open access journals. Alexander described the SPARC Chemistry Climate Model Initiative, conducted jointly with IGAC, including plans for engagement with CMIP6. She introduced three themes emerging in the new SPARC implementation plan, reviewed interactions with groups and organizations outside of SPARC, identified connections with WCRP Grand Challenges, and highlighted capacity development activities. In response to the question ‘does WCRP have a programmatic gap in the area of atmospheric dynamics’, Alexander identified atmospheric threads in all WCRP projects and indicated that cooperation through topical meetings and the WCRP Grand Challenges fills the apparent gap.

**4.4** L. Goddard and D. Stammer (*see presentation 4.4*) presented their report from the WCRP Climate Variability (CLIVAR) project, with a deliberate focus on how CLIVAR evolves on many fronts including new plans and implementation strategies, contributions to and leadership of WCRP Grand Challenges, engagement with partners on sustained ocean observations and growing connections to marine biogeochemistry and ecology communities. They first described new sponsors – State Oceanic Administration in China and India Institute of Tropical Meteorology in India – and new arrangements for the CLIVAR project office. They introduced an integrated Monsoons Panel, joint with GEWEX and meeting next at the upcoming GEWEX / CLIVAR meeting, and a Climate Dynamics panel that establishes many links within CLIVAR and to other activities of WCRP. They described seven emerging research foci for CLIVAR, each based on capabilities and expertise within CLIVAR, as key areas for progress over the next 5-10 years; several of these integrate closely with WCRP Grand Challenges. CLIVAR will use these research foci to guide and plan events for the next year and as they look toward a CLIVAR science conference for perhaps 2016.

## 5. Working Groups Session

**5.1** **WDAC report** by O Brown (*see presentation 5.1*). This Council met most recently in May 2014, in Ireland. Brown started by reviewing recommendations from JSC-34 which serves as a basis for the May meeting. After describing several activities specific to those recommendations, Brown focused on Obs4MIPS, particular with CMIP6 in mind and in view. The WDAC conveyed two recommendations to the JSC: to establish a WCRP-wide surface flux task team and to promote open data access throughout WCRP through the mechanisms of data publication and adoption of digital object identifiers (doi).

**5.2** **WGRC report** by C. Goodess (*see presentation 5.2*). Goodess reviewed the terms of reference. This group met most recently in March 2014, in Uruguay.

WGRC takes the responsibility for interface with GFCS. Goodess reviewed a series of recent developments within WGRC including three – a WGRC “Distillery” expert meeting (scheduled for early November, Spain), a CORDEX-Africa-Analysis (CAA) pilot project and paper and a working paper on regional climate information – initiated in response to action items from JSC-34.

Because remit of WGRC includes oversight of CORDEX, this report included substantial review of **CORDEX activities** (*presentation from F. Giorgi embedded*). The CORDEX

presentation included a report on a 2013 CORDEX conference in Belgium and noted the increasing emergence of publications conveying CORDEX outcomes. The CORDEX report highlighted the positive developments related to inception of a CORDEX International Project Office in Stockholm supported by the Swedish Meteorological and Hydrological Institute. Issues emerging from CORDEX Phase 1 include better coordination/homogenization across activities in the different CORDEX domains, improved at management and distribution and need of clear protocols for identification and “approval” of CORDEX domains (JSC-34 Action item 9). CORDEX moves into its second Phase with plans to increase “base” resolution (50 km → 25 km), revisit “base” large domains and develop “Flagship” Pilot Studies (FPSs) including clear and transparent protocols for identifying FPSs.

**5.3 WGCM and CMIP6 report** by C. Senior ([see presentation 5.3](#)). The presentation focused on plans, preparations and proposed schedules for CMIP6, providing information largely from the Meehl et al paper (2014) *Eos Trans. AGU*, 95(9), 77. WCRP grand challenges provide much of the scientific organization and motivation for CMIP6. CMIP6 envisions a distributed organizational structure with Diagnostic, Evaluation and Characterization of Klima (DECK) experiments coupled with standardization, coordination, infrastructure, and documentation functions to make the simulations and their main characteristics available to the broader community. In addition to DECKs, CMIP6-endorsed MIPs would propose additional experiments; modelling groups could choose a subset of these to run according to their interest, computing and/or human resources and funding constraints. The presentation summarized WGCM membership changes and activities planned for 2014 and 2015.

**5.4 WGSIP report** by F. Doblas-Reyes ([see presentation 5.4](#)). Doblas-Reyes demonstrated and emphasized strong links of WGSIP with operational activities. He documented a growing number of seasonal hindcasts in the CHFP database and showed recent results for extratropical winter predictability that indicated a clear role for the stratosphere. WGSIP proposes three new science projects covering model drift/initial shock and model validation within the first month, interaction/teleconnection between tropics and extratropics and a snow-focussed Global Land-Atmosphere Coupling Experiment (GLACE). The report noted discussions of decadal prediction for CMIP6 jointly with WGCM and CLIVAR and outlined processes and mechanisms for exchange of real time decadal predictions. Responding in part to actions items arising from JSC-34, Doblas-Reyes documented strong links to GCs and THORPEX legacy projects. Finally, the presentation highlighted important data dissemination and documentation issues arising from movement toward ESGF data formats and tools.

**5.5 WGNE report** by J-N. Thépaut ([see presentation 5.5](#)). Thépaut outlined a range of recent WGNE activities, meetings and workshops, with specific examples related to Madden-Julian Oscillation (MJO), model momentum budgets and drag parameterizations, and substantial impacts of including aerosol terms in NWP models. For future WGNE activities Thépaut highlighted shorter-range weather forecasting at higher resolution and with cloud, precipitation or surface air temperature as validation parameters and expanded earth system modelling, both in the context of a continuing focus on fundamental model developments across time scales and growing inclusion of atmospheric chemistry and air quality. Thépaut documented explicit WGNE interaction with and support to CMIP, S2S and various WMO polar prediction initiatives.

**5.6 WWRP report** by S. Jones ([see presentation 5.6](#)). Jones presented the recent 2009-2017 WWRP Strategic Plan focussed on fundamental observing system research and predictability, tropical meteorology, mesoscale weather forecasting, nowcasting, verification and societal and economic applications. She emphasized that the WWRP plan maintains

strong links with GAW and the WCRP. Jones outlined future activities in prediction of many components of the water cycle, in assimilating data from new observational systems, on data assimilation and ensemble modelling techniques and on improvements in fundamental model physics. Jones presented the post-Thorpex priorities for WWRP: sub-seasonal to seasonal predictions, polar predictions and high impact weather. All of these represent good opportunities for collaboration with WCRP. Jones finished by presenting latest plans for the WWRP Open Science Conference scheduled for August 2014 in Montreal.

**NOTE** – On Wednesday 2 July WCRP joined the WMO Commission for Climatology in a joint meeting of the Technical Conference on Climate Services entitled ‘New Climate Research and Operational Challenges and Perspectives’ (<http://www.wmo.int/pages/prog/wcp/ccl/ccl16/teco/programme.php>). WCRP and CCI developed a joint statement ([http://www.wcrp-climate.org/images/documents/jsc/Joint CCI-WCRP Statement 2014.pdf](http://www.wcrp-climate.org/images/documents/jsc/Joint_CCI-WCRP_Statement_2014.pdf)).

On Wednesday 2 July the WCRP Modelling Advisory Council WMAC held its parallel session. Their report discussed below and available [here](#).

The JSC reviewed an initial list of action items arising from Monday and Tuesday.

**5.7 WMAC report** by C. Jakob ([see presentation 5.7](#)). Quick summary, [full report here](#). After successful format (participate in JSC information sessions for projects and grand challenges followed by separate one-half day synthesis meeting), the WMAC addressed the WCRP/WWRP modelling prize, data archival procedures (including ESGF), and the idea of synthesis papers. WMAC requests explicit reports from across the WCRP (projects, grand challenges, and working groups) on model development activities and model and data impediments. WMAC recommended a strengthening of the scientific focus and model evaluation activities of the WCRP Working Group on Regional Climate as opposed to a more application-driven and user focus. (This recommendation simulated vigorous discussion.) WMAC proposed a point of contact for ESGF as well as a series of initial steps and pilot data projects to develop WCRP interface to ESGF. WMAC outlined practical mechanisms intended to increase attention to, resources for and focus on model development including outreach, summer schools and the WCRP / WWRP modelling prize. WMAC did not identify gaps in atmospheric dynamics research across WCRP but did endorse the SPARC-led inventory to identify opportunities for improved coordination. WMAC also suggested small changes to the CMIP process, particularly to clarify the need for DECK experiments/runs as entry requirements for other activities.

## 6. External Partners Session

**6.1 GCOS report** by S. Briggs ([see presentation 6.1](#)). Briggs reported on the milestones, status and structure of GCOS. He outlined recent GCOS activities focused on climate services and then reviewed the three shared GCOS and WCRP observations panels on atmosphere, terrestrial and ocean (AOPC, TOPC and OOPC). GCOS also connects to WCRP Data Advisory Council and to WMO space observations coordination groups. Briggs presented improvement processes and developing implementation plans for GCOS and mentioned the planned GCOS IPCC lessons learnt for observations workshop intended to follow the WCRP / IPCC lessons learnt for research workshop. Briggs welcomed additional connections between GCOS and WCRP across a range of activities.



**6.2 PROVIA report** by H. Kremer ([see presentation 6.2](#)). Kremer reviewed development and progress for Programme of Research On Climate Change Vulnerability, Impacts and Adaptation (PROVIA), jointly sponsored by UNEP, UNESCO and WMO. He outlined an engagement process resulting in a set of [research priorities](#) and leading, hopefully, to broadened support and recognition and to a PROVIA ‘coasts and cities’ conference in 2016.

**6.3 ICSU report** by S. Wilson ([see presentation 6.3](#)). Wilson reviewed the ICSU mission and themes, focusing on the three goals of research, science for policy and universality of science.

**6.4 Future Earth report** by F. Berkhout ([see presentation 6.4](#)). Berkhout discussed the origins of Future Earth from Rio+20 and described oversight by the Global Science and Technology Alliance for Sustainability (WMO had just changed status from observer to member of that group). Berkhout described the infrastructural (observation), international, epistemic and resource motivations for Future Earth. He reported the very recent establishment of a global hub secretariat arrangement for Future Earth and initial fast-track funding initiatives. Berkhout emphasized the need for a close relationship with WCRP.

The JSC requested greater clarity and definition of the WCRP to Future Earth connection.

**6.5 International Geosphere-Biosphere Program report** by S. Seitzinger ([see presentation 6.5](#)). Seitzinger focussed on IGBP-WCRP connections, particularly at project (e.g. SOLAS, PAGES) levels. She discussed a possible climate cluster within Future Earth, interactions around IPCC and particularly AR6, and leadership and reporting roles for IGBP and/or WCRP with respect to UNFCCC Research Dialogues. Seitzinger noted upcoming cooperation between WCRP and IGBP for reporting to the ICSU General Assembly and presented IGBP plans for end-of-programme ‘Landmark Synthesis’ products and event focussed on AGU Fall Meeting 2015.

**6.6 Lessons Learnt workshop** ([see presentation 6.6](#)). G. Brasseur reported plans for the WCRP / IPCC joint Lessons Learnt workshop scheduled for September 2014.

**6.7 Recent WCRP activities in Africa and Latin America.** F. Semazzi reported outcomes of the [Africa Climate Research for Development](#) conference that occurred in October 2013 ([see presentation 6.7.1](#)). Semazzi included in his presentation a proposal to hold JSC 36 in Kampala, Uganda and a review of activities planned as part of the Hydrology of Lake Victoria (HyVic) project. C. Goodess presented outcomes and recommendations of the WCRP [Conference for Latin America and the Caribbean](#) that occurred in March 2014 ([see presentation 6.7.2](#))

**6.8 Darmstadt Climate Symposium** ([see presentation 6.8](#)). R. Boscolo reported plans for the upcoming [Climate Symposium](#) scheduled for October 2014.

**6.9 Capacity Development, Early Career Scientists.** R. Boscolo ([see presentation 6.9](#)) reported on a series of summer schools planned for 2014 and 2015. She also reported ([presentation available](#)) on developments and ideas from a group of climate-related early career scientists adopting the label YESS: [Young Earth System Scientists](#). The JSC appreciated the YESS initiative but asked for broader representation internationally and across disciplines.

**6.10 Emerging Issues, Climate Engineering** ([see presentation 6.10](#)). D. Carlson presented material developed by WMO Committee on Atmospheric Science (CAS) offering information and guidelines on climate engineering. Discussion revealed an existing WCRP activity: [geoMIP](#). The JSC decided to take no additional action with respect to the CAS recommendations.

## 7. Science Presentation Session

Lydia Gates, Deutscher Wetterdienst, presented a talk entitled ‘Developing the Scientific Basis for Climate Services’ ([see presentation 7.1](#)).

Thorsten Mauritsen, Max Planck Institute for Meteorology, presented a talk entitled ‘Climate Change with an Iris Effect’ ([see presentation 7.2](#)).

# APPENDIX 1: Action Items

## **1. Action: Guidelines and templates to renew SSG and WG membership**

JPS to provide guidelines and templates to assist projects and working groups in new member nomination and selection processes. The guidance should specify a clear sequence of required actions.

Responsible: D/WCRP

Deadline: October 2014

## **2. Action: JSC liaisons to projects, grand challenges and other WCRP constituencies**

D/WCRP to review with JSC chair lists of JSC liaisons from JSC-34 as modified at JSC-35. Liaisons and POCs should be included in mailing lists of projects and constituencies and attend respective meetings as appropriate.

Responsible: D/WCRP

Deadline: October 2014

## **3. Action: Document and information support for JSC meeting**

JPS to explore whether more or additional materials, of information and preparatory nature, could go on-line 2 to 3 weeks prior to JSC meeting.

Responsible: D/WCRP

Deadline: before JSC-36

## **4. Action: Future Earth**

D/WCRP to draft a clear statement on the WCRP official relation to Future Earth. The statement should be shared with Future Earth leadership and WMO, ICSU, IOC management for consensus. A summary declaration should appear prominently on both the Future Earth and WCRP websites

Responsible: D/WCRP

Deadline: Done

## **5. Action: Continuation of research activities of importance to WCRP**

D/WCRP to: monitor the evolving composition and organization of Global Environmental Change programs and constituencies; ensure that scientific cooperation between those communities and WCRP remains vital and effective; and initiate, where necessary and agreed (e.g. for PAGES) formal discussions with the project and Future Earth about explicit co-sponsorship.

Responsible: D/WCRP

Deadline: report at JSC-36

## **6. Action: Future Earth ocean alliance initiative**

Together with CLIVAR, D/WCRP to explore the possibility to co-sponsor an ocean alliance initiative with Future Earth.

Responsible: D/WCRP, CLIVAR

Deadline: discuss with Future Earth by end of September 2014. Decision to be made at CLIVAR SSG in November 2014

## **7. Action: Grand Challenge on Regional Sea Level**

D/WCRP in consultation with Co-Chairs of the Grand Challenge and leads of the WCRP/IOC Task Group on Sea Level Variability and Change to discuss ToRs of all formally existing activities and resolve existing duplications.

Responsible: D/WCRP, D. Stammer, V. Ryabinin

Deadline: D/WCRP to present the matter to IOC Executive Secretary not later than October 2014 and have a decision at IOC-28 in 2015.

**8. Action: All Grand Challenges**

Leaders of Grand Challenges (GC) to prepare short documents formulating the added value, uniqueness and any gaps of their GC, including expected or required linkages to and contributions by core projects and working groups.

Responsible: leads of all GCs.

Deadline: initial discussions at The Hague meeting mid-July and further steps in August – October 2014

**9. Action: GC Brochure**

JPS to develop a brochure about the GCs ready for the AGU FM 2014.

Responsible: JPS

Deadline: November 2014

**10. Action: Atmospheric dynamics**

SPARC to collect and provide an inventory of relevant atmospheric dynamics across WCRP, host on SPARC website, and serve as point of contact in this regard.

Responsible: SPARC Co-chairs

Deadline: analyse progress at SPARC SSG in January 2015.

**11. Action: Ocean Model Development Panel**

CLIVAR to pursue a plan for transformation of WGOMD into OMDP

Responsible: CLIVAR Co-chairs

Deadline: review at CLIVAR SSG in November 2014

**12. Action: CLIVAR Climate Dynamics Panel**

Request the Climate Dynamics panel to consolidate plans and establish links across CLIVAR and WCRP as appropriate

Responsible: CLIVAR Co-chairs

Deadline: review at CLIVAR SSG in November 2014

**13. Action: WDAC Flux Task Team**

Request the Task Team to invite additional GEWEX expertise on land fluxes and consider adding WGNE SURFA representation

Responsible: WDAC Co-Chairs

Deadline: Dec 2014

**14. Action: Open access to published datasets**

WDAC Co-Chairs to draft and JPS to distribute to the WCRP community a short letter promoting open access publication of datasets and endorse use of DOI for data sets.

Responsible: WDAC Co-Chairs

Deadline: Dec 2014

**15. Action: Obs4MIPs**

Encourage each core project to publish/migrate data sets to Obs4MIPs. Conduct a test case using GEWEX data sets and report progress at JSC-36

Responsible: WDAC Co-Chairs, GEWEX

Deadline: JSC-36

**16. Action: ESGF representative/talk at next JSC**

JSC to consider having ESGF representative/talk at next JSC meeting

Responsible: JSC Chair with assistance of WMAC Co-Chairs

Deadline: JSC-36

**17. Action: Development of CMIP6**

WGCM and CMIP6 leaders to clarify whether contributions of model groups to DECK experiments are considered a requirement for participation in other CMIP activities and to propose best practices for CMIP model documentation.

Responsible: WGCM Co-Chairs and CMIP Co-Chairs

Deadline: Sept 2014

**18. Action: WGRC – RCC - RCOFs**

WGRC to consider how to effectively exploit the existing infrastructure elements of climate services, such as RCCs and RCOFs.

Responsible: WGRC Co-chairs

Deadline: to be discussed at the next WGRC meeting in March 2015

**19. Action: Concept paper on CORDEX flagship experiments**

Draft a white paper on the CORDEX flagship experiments for consideration by the JSC and WMAC

Responsible: CORDEX SAT Co-Chairs

Deadline: JSC-36

**20. Action: Synthesis paper on modelling of the regional climate**

Develop a synthesis paper on the status of model-based climate information on regional scales. As part of this activity consider organizing a science workshop with CORDEX, WGNE, WGCM, WGSIP and core projects.

Responsible: WGRC Co-Chairs with leads of all spell out

Deadline: Dec 2014

**21. Action: Develop a model evaluation strategy for regional climate information**

Design and implement an evaluation strategy for regional climate information based on global and regional products

Responsible: WGRC Co-Chairs with spell out

Deadline: Spring 2015

**22. Action: Reporting on model development**

Model development and identified impediments to or requirements for model improvement to be identified and mentioned explicitly in Project and GC reports to JSC (at least one slide for the developments and impediments).

Responsible: all Projects, WGs and GCs

Deadline: starting at JSC-36

**23. Action: Invitation document for model development training activities**

Draft a call for proposals with requirements and selection criteria for organizing model development training activities. Provide visibility to this activity on the WMAC webpage

Responsible: WMAC

Deadline: Dec 2014

**24. Action: WCRP/WWRP International Prize for Model Development**

Formalize the creation of an annual Model Development Prize together with WWRP specifying eligibility, selection process, nominations, etc.

Responsible: WMAC and JPS

Deadline: Fall 2014

**25. Action: LAC Conference**

WGRC together with CLIVAR and GEWEX to review the outcome of the LAC conference and provide guidance on the follow up activities

Responsible: WGRC

Deadline: December 2014

**26. Action: ACC Conference**

WGRC together with CLIVAR and GEWEX to monitor the development of CR4D plan and provide guidance to the community for obtaining a WCRP endorsement

Responsible: WGRC

Deadline: JSC-36

**27. Action: IPCC workshop**

Request the organizers of the IPCC-WCRP workshop to consider a Break Out Group on "shorter" (decadal) timescale. JSC members should lead this BOG. In addition propose to discuss during the workshop the possibility for IPCC to deliver interim synthesis papers between the assessment reports.

Responsible: M. Rixen

Deadline: Done

**28. Action: GC Summer Schools**

GCs leaders to consider proposing a theme for a training school to be organized by JPS in partnership with other training organizations. Consider a formal WCRP partnership with ICTP for training activities.

Responsible: R. Boscolo

Deadline: 10-12 September 2014

**29. Action: ECS network**

JPS and JSC to provide guidance to the ECS network YESS recommending and helping them to expand their engagement in developing countries.

Responsible: G. Brasseur and R. Boscolo

Deadline: Done

**30. Action: Strengthen collaboration with WWRP**

WCRP JSC and WWRP SC to coordinate use of resources, agendas and synergies and plan for a joint session in the near future

Responsible: D/WCRP and D/RES

Deadline: Provide information at JSC-36

**31. Actions on steering group and working group membership**

- GCOS diversity issue to be raised by D/WCRP
- Recommend High latitude ocean membership focus for CLiC
- Land surface processes for CLIVAR
- Precipitation expertise for GEWEX
- WGCM to consider GFDL representation in the future for US
- JSC Vice-Chair to mail out membership spreadsheet Sunday night prior to JSC meeting to JSC with officers' notes
- Have panel core project chairs report on how they deal with recruitment for their wgs
- Refer other issues directly to Vice-Chair within 2 weeks

Responsible: WCRP JPS, D/WCRP, JSC Vice-Chair

Deadline: Implement for JSC-36

## APPENDIX 2: Agenda V5

### Sunday, 29 June

- 16:00 JSC Officers meeting  
18:00 Informal meeting of available JSC members (optional)

### Monday, 30 June

- Item**
1. Opening Session
- 08:00 Registration  
08:30 Call to order and welcome remarks by Host – *Dr Paul Becker DWD Vice President*  
08:45 Introduction of new attendees - *A. Busalacchi*  
09:00 1.1 Report on JPS developments, program, personnel, budget – *D/WCRP*  
09:30 1.2 Report on WCRP developments, expectation for JSC-35, summary of JSC-34 actions - *A. Busalacchi*
- 10:00 Coffee Break
2. Sponsors / GFCS : Evolving Role of WCRP and charges to WCRP JSC-35 (15 minute presentation+15 minute discussion)
- 10:30 2.1 WMO - *DSG*  
11:00 2.2 IOC - *W. Watson-Wright (remotely)*  
11:30 2.3 GFCS - *Filipe Lucio*
- 12:00 Lunch Break
3. Implementation of Grand Challenges  
Highlights and progress to date, milestones, deliverables, impediments, interdependencies and coordination, response to JSC-34 actions, 30 minute presentation + 15 minute discussion)
- 13:15 3.1 Grand Challenge on Regional Sea Level Rise - *D. Stammer (CLIVAR lead)*  
14:00 3.2 Grand Challenge on Water Availability - *G. Stephens (GEWEX lead)*  
14:45 3.3 Grand Challenge on Cryosphere in a Changing Climate - *G. Flato and T. Shepherd (CliC/SPARC co-lead)*
- 15:30 Coffee Break
- 16:00 3.4 Grand Challenge on Regional Climate Information - *C. Goodess (WGRC lead with CLIVAR)*  
16:45 3.5 Grand Challenge on Climate Extremes - *S. Seneviratne (GEWEX lead)*  
17:30 3.6 Grand Challenge on Clouds, Circulation, and Climate Sensitivity - *S. Bony (WGCM lead)*

### Tuesday, 1 July

**Item**

4. Core Projects

Project response to JSC34 actions items, implementation plans/timeline for new directions, internal structural changes, contributions to GCs, and cross project interdependencies, 45 minute presentation + 15 minute discussion)

- 08:30 4.1 CliC - *G. Flato*  
09:30 4.2 GEWEX - *S. Seneviratne and G. Stephens*  
10:30 Coffee Break  
11:00 4.3 SPARC - *J. Alexander*  
12:00 4.4 CLIVAR - *D. Stammer*  
13:00 Lunch  
5. WCRP Councils and Working Groups and WWRP  
Response to JSC34 actions items, implementation plans/timeline for new directions, internal structural changes, contributions to GCs as appropriate, and cross programme interdependencies, 20 minute presentation + 10 minute discussion)  
14:00 5.1 WDAC - *O. Brown*  
14:30 5.2 WGRC inclusive of CORDEX - *C. Goodess*  
15:00 5.3 WGCM + CMIP6 - *C. Senior and S. Bony*  
15:30 Coffee Break  
16:00 5.4 WGSIP inclusive of S2S and Decadal Predictions - *F. Doblas-Reyes*  
16:30 5.5 WGNE - *J-N. Thepaut*  
17:00 5.6 WWRP including PPP, OSC, and S2S - *Sarah Jones*  
17:30 Summary of day's discussion

**Wednesday, 2 July - Joint CCI/WCRP Session - TeCO on Climate Services - Building on CLIPS Legacy**

**New Climate Research and Operational Challenges and Perspectives**

<http://www.wmo.int/pages/prog/wcp/ccl/ccl16/teco/index.php>

(Joint CCI/WCRP Session)

Session themes:

**Session 8: Research to support operational climate service providers**

**Session 9: Inter-annual predictions & beyond - decade to centuries**

**Session 10: Regional Climate – science and operational**

**Session 11: Using uncertain information in decision making**

WMAC Parallel Meeting



## Thursday, 3 July

	<b>Item</b>	
08:30		Revisit Grand Challenges, Project Contributions, and joint day with CCI
09:00	5.7	WMAC - <i>C. Jakob</i>
	6.	<u>WCRP Partnerships, Sponsor and Joint Initiatives (20 minute presentation + 10 minute discussions)</u>
09:30	6.1	GCOS - <i>S. Briggs / C. Richter</i>
10:00	6.2	PROVIA - ???
10:30		Coffee Break
11:00	6.3	ICSU – <i>Steven Wilson</i>
11:30		Science presentation - <i>Lydia Gates (DWD)</i>
12:00		Science presentation - <i>Thorsten Mauritsen (MPI)</i>
12:30		Lunch Break (JSC Executive Session in parallel with Directors and JPS meeting)
14:00	6.4	Future Earth - <i>Frans Berkhout</i>
14:45	6.5	IGBP and joint activities such as SOLAS and PAGES - <i>S. Seitzinger</i>
15:30	6.6	Joint workshop with IPCC on AR5 lessons learned - <i>A. Cazenave</i>
15:45	6.7	ACC2013 and LACC2014 - <i>F. Semazzi / C. Goodess</i>
16:00		Coffee Break
16:30	6.8	Climate Symposium 2014 - <i>R. Boscolo</i>
16:45	6.9	Capacity development, outreach, ECS - <i>R. Boscolo</i>
17:00	6.10	Discussion: Emerging issues (e.g., climate engineering) and challenges ahead for the WCRP
18:00		Social Event – no cost - boat trip on the river Neckar and dinner

## Friday, 4 July

09:00	7.	<u>Discussion on way forward</u>
09:30	8.	<u>Review of Recommendations/Actions</u>
10:45		Coffee Break
11:15		Review of Recommendations/Actions (cont'd)
12:00		Close of Open session
		Lunch Break
	9.	<u>JSC Executive Session</u>
13:30	9.1	Implementation Issues with respect to Grand Challenges
	9.2	Research activities and GFCS
	9.3	Engagement with Future Earth
	9.4	Membership
	9.5	Action Items
	9.6	Next meeting
17:00		Meeting ends

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